

AMENDMENTS TO THE CLAIMS

Please amend claims 1-20 as follows:

1. (Currently Amended) A coupling device for a shaft, comprising:
 - a coupling disk ~~(1)~~ associated with an out-extending shaft ~~(8)~~;
 - a disk ~~(2)~~ connected with an external force member ~~(7)~~;
 - a first concave-convex assembly ~~(4)~~ which is press engaged with said disk ~~(2)~~;
 - a second concave-convex assembly ~~(5)~~ which is engaged with said coupling disk ~~(1)~~;
 - a force generating source member ~~(3)~~ provided between said coupling disk ~~(1)~~ and said disk ~~(2)~~, characterized in that:
 - said first and second concave-convex assemblies ~~(4, 5)~~ are configured to be a press engagement arrangement in which rotational angular displacement and axial displacement relative to each other is operable;
 - said first concave-convex assembly ~~(4)~~ and said disk ~~(2)~~ are configured to be an axial press engagement arrangement in which rotational sliding angular displacement between said first concave-convex assembly ~~(4)~~ and said disk ~~(2)~~ relative to each other is operable;
 - an external force association member ~~(6)~~ is provided between said concave-convex assembly ~~(4)~~ and an external force member ~~(7)~~, and said external force association member ~~(6)~~ and said concave-convex assembly ~~(4)~~ are configured to be a radial press engagement arrangement in which an axial sliding displacement between said external force association member ~~(6)~~ and said concave-convex assembly ~~(4)~~ relative to each other is operable;

said concave-convex assembly ~~(5)~~ is mounted on said coupling disk ~~(1)~~, and two ends of said force generating source member ~~(3)~~ are connected with said coupling disk ~~(1)~~ and said disk ~~(2)~~;

upon action of said force generating source member ~~(3)~~, said disk ~~(2)~~ is associated with said out-extending shaft ~~(8)~~ through said coupling disk ~~(1)~~ so that said external force member ~~(7)~~ and said out-extending shaft ~~(8)~~ are associated.

2. (Currently Amended) The coupling device for a shaft according to claim 1, further comprising:

a friction block ~~(20)~~ provided between said coupling disk ~~(1)~~ and said coupling disk ~~(2)~~; and

a retaining member ~~(21)~~ which is coupled with said friction block ~~(20)~~, wherein: friction surfaces respectively extending from said coupling disk ~~(1)~~ and said disk ~~(2)~~ engage with said friction block ~~(20)~~.

3. (Currently Amended) The coupling device for a shaft according to claim 2, wherein:

said friction surfaces include an inner disk body ~~(23)~~ and an outer friction ring ~~(24)~~, wherein:

said inner disk body ~~(23)~~ and said outer friction ring ~~(24)~~ are provided therein with an outer threaded block ~~(27)~~, a compensation spring ~~(28)~~ and a key pin ~~(36)~~.

4. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said first and second concave-convex assemblies ~~(4, 5)~~ are supported on a left end plate ~~(54)~~ and a right end plate ~~(56)~~ of said retaining member ~~(21)~~ through bearings ~~(52')~~, respectively.

5. (Currently Amended) The coupling device for a shaft according to claim 4, wherein:

said second concave-convex assembly ~~(5)~~ is provided with an inner brake ring ~~(53)~~.

6. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said first and second concave-convex assemblies are provided with an insert rod ~~(38)~~ and insert slot which correspond to each other so as to be locked with each other, and said insert rod ~~(38)~~ is mounted inside an outer threaded sleeve ~~(84)~~ of a release-ensuring frame ~~(41)~~;

one end of a release-ensuring spring ~~(40)~~ is connected with a plug ~~(85)~~ of said insert rod ~~(38)~~, and the other end of said release-ensuring spring ~~(40)~~ is connected with a cap ~~(45)~~;

inner threads of said cap ~~(45)~~ are connected with said outer threaded sleeve ~~(84)~~, and said insert rod ~~(38)~~ passes through a hole of said cap ~~(45)~~ so as to be connected with a centrifugal cap ~~(44)~~.

7. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said coupling disk ~~(1)~~ is assembled to said out-extending shaft through a shaft coupling member ~~(9)~~.

8. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said first concave-convex assembly ~~(4)~~ and said external force association member ~~(6)~~ are configured to be engaged with each other through an outer spline and an inner spline.

9. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said force generating source member ~~(3)~~ comprises a press spring ~~(3')~~.

10. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

a friction member ~~(18)~~ is provided between said first concave-convex assembly ~~(4)~~ and said external force association member ~~(6)~~; and
said friction member ~~(18)~~ engages with said first concave-convex assembly ~~(4)~~ and said external force association member ~~(6)~~, respectively.

11. (Currently Amended) The coupling device for a shaft according to claim 10, wherein:

said friction transmission member ~~(19)~~ is provided between said first concave-convex assembly ~~(4)~~ and said friction member ~~(18)~~; and
said friction transmission member ~~(19)~~ engages with said first concave-convex assembly ~~(4)~~ and said friction member ~~(18)~~ respectively.

12. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said first and second concave-convex assemblies ~~(4,5)~~ include engaging surfaces of right-handed helicoids which are engaged with each other.

13. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

said disk ~~(2)~~ includes a release-ensuring frame ~~(41)~~ projected from therefrom;
said first concave-convex assembly ~~(4)~~ includes a cylindrical sleeve ~~(70)~~ which is fitted over thereon; and

a locking member (a) is fixedly engaged with said release-ensuring frame (41) and said cylindrical sleeve (70) so that relative rotational movement between said first and second concave-convex assemblies (4, 5) is locked.

14. (Currently Amended) The coupling device for a shaft according to claim 8, wherein:

said first concave-convex assembly (4) is provided with an inner spline (15) so as to engage with an outer spline (16) provided on said second concave-convex assembly (5).

15. (Currently Amended) The coupling device for a shaft according to claim 3, wherein:

said outer friction ring (24) engages with a right friction ring (35) through said key pin (36), and said right friction ring (35) is associated with said friction ring (20).

16. (Currently Amended) The coupling device for a shaft according to claim 1, wherein:

a pull rod (14) is mounted on said coupling disk (1) and passes through a circular hole of said disk (2) so as to be associated with said disk (2).

17. (Currently Amended) The coupling device for a shaft according to claim 9, wherein:

a pull rod (14) is mounted on said coupling disk (1) and passes through a circular hole of said disk (2) so as to be associated with said disk (2).

18. (Currently Amended) The coupling device for a shaft according to claim 17, wherein:

said press spring (3') is fitted over said pull rod-(14), wherein:

one end of said press spring (3') is pressed against and mounted on said disk-(2), and the other end of said press spring (3') is mounted on said pull rod-(14).

19. (Currently Amended) The coupling device for a shaft according to claim 2, wherein:

said retaining member (21) is mounted on a relatively movable object so as to achieve a coupling clutch function.

20. (Currently Amended) The coupling device for a shaft according to claim 2, wherein:

said retaining member (21) is mounted on a relatively static object so as to achieve a coupling brake function.